



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/577,252

01/12/2007

Renato Caretta

07040.0259

9678

22852

7590

04/19/2011

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP

901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

ROGERS, MARTIN K

ART UNIT

PAPER NUMBER

1747

MAIL DATE

DELIVERY MODE

04/19/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,252	Applicant(s) CARETTA ET AL.	
	Examiner MARTIN ROGERS	Art Unit 1747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-40 is/are pending in the application.
- 4a) Of the above claim(s) 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33-35 and 37-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 33, 34, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caretta (Pre-Grant Publication 2002/0125615) in view of Blickwedel et al. (WO 00/03867), and Midgley et al. (USP 1394928). Note that USP 6923879 is an English language equivalent of the WO document and used below to make the following rejections.

Art Unit: 1747

In regards to claim 33, Caretta discloses a process for creating pneumatic tires (Abstract) in which a liner is created and cured on a toroidal support which matches the shape of the inner surface of a tire ([0083]) and then the remainder of a tire is built on the liner layer and cured in a mold which conforms in shape to the final shape of the tire ([0091]). Caretta does not disclose precuring both a liner and a carcass portion of the tire in a hermetically sealed chamber prior to the tire vulcanization/completion step.

Blickwedel discloses that by performing a precure operation on the carcass layer in addition to a liner layer (Column 6, lines 67), the carcass layer including horn profiles (Abstract), several advantages can be achieved, such as the ability to create a variety of tires from a single production line (Column 6, lines 35-38) and improved dimensions in the final tire (Column 4, lines 52-56). One of ordinary skill would therefore find it obvious to pre-cure a carcass layer of the tire in addition to the liner in the method of Caretta for the benefit of improving the dimensions of the final tire or increasing the adaptability of the process to different products (as disclosed by Blickwedel). Caretta discloses curing the liner layer of a tire in open air by applying heat through the tire support ([0084]). Caretta does not disclose how a carcass layer could be pre-cured. Caretta discloses that a variety of exemplary curing methods can be used to vulcanize the liner layer ([0084]), suggesting to one of ordinary skill in the art that any well known method for curing a pre-tire structure would also be suitable.

One of ordinary skill would turn to the disclosure of Midgley, which discloses that a carcass structure can be cured on a heated rigid support (page 2, lines 99-102).

Midgley discloses that skilled artisan would consider it to be functionally equivalent to

Art Unit: 1747

either heat the carcass structure in open air or under an applied fluid pressure (Page 2, lines 15-35). Midgley further discloses that a fluid pressure pressing the carcass against the rigid support can be supplied through a hermetically sealed container (Page 2, lines 35-47 and Page 4, lines 9-12). Midgley discloses that compressing the carcass against the rigid support during pre-curing has the additional benefit of creating a more uniform product (Page 1, lines 79-84 and 94-101) (Page 2, line 129 though Page 3, line 2).

Therefore, one of ordinary skill in the art at the time of the invention would have found it obvious to perform the carcass and liner pre-curing on the heated supported required by the previous combination in a hermetically sealed pressure vessel because this is functionally equivalent to curing in an open air environment (as disclosed by Midgley). One of ordinary skill would have been further motivated to utilize a hermetically sealed container for the additional benefit of ensuring the uniformity of the product (as disclosed by Midgley).

In regards to claim 34, Blickwedel further discloses that the belt structure be pre-cured (Column 3, line 46).

In regards to claim 37, Caretta further discloses heating with electrical heaters, which would generate heat at the surface of the rigid support ([0084]).

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over the previous combination of Caretta (Pre-Grant Publication 2002/0125615) in view of

Art Unit: 1747

Blickwedel et al. (WO 00/03867), and Midgley et al. (USP 1394928) as applied to claim 35 above, and further in view of Brewer (USP 4620561).

In regards to claim 35, Midgley is silent as to in what order heat and pressure and applied to the to the carcass during the curing operation, suggesting to one of ordinary skill in the art that any well known method of curing a portion of a tire under pressure would be suitable.

Brewer discloses that it is well known to pressurize a tire laminate prior to applying heat to the laminate (Column 1, lines 49-55). Therefore, one of ordinary skill in the art at the time of the invention would have found it obvious to pressurize the laminate of the previous combination before heating it because this is a well known order to perform the pressurized curing step required by the previous combination.

Claims 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over the previous combination of Caretta (Pre-Grant Publication 2002/0125615) in view of Blickwedel et al. (WO 00/03867), and Midgley et al. (USP 1394928) as applied to claim 35 above, and further in view of Oku (Pre-Grant Publication 2002/0121324) or Dailliez (USP 5622669).

In regards to claim 37, Caretta further discloses that the toroidal support can be heated by a variety of exemplary methods ([0084]), suggesting to one of ordinary skill in

Art Unit: 1747

the art that any well known method of providing a curing energy to a tire component would be suitable.

Oku suggests that a precuring operation can be performed by providing energy in the form of magnetic induction ([0031]). Dailliez also discloses that it is known to provide a curing energy through magnetic induction (Column 3, line 7). One of ordinary skill in the art would therefore be motivated to heat the tire component on the toroidal support of the above combination with magnetic induction because this is a well known method of providing a curing energy for a tire component (as disclosed by Oku and Dailliez).

In regards to claim 38, one of ordinary skill in the art would find it obvious to use magnetic induction for the reasoning provided for claim 37. It is the examiner's position that because the specification of the present application states that the presence of a magnetic field is the only thing necessary for heat generation within the tire, the use of a magnetic field for the reasoning presented above would be expected to have the tire-heating affect required by the claim.

In regards to claim 39, one of ordinary skill would appreciate that the heating time required is dependent on the type of tire, its size, shape and composition. One of ordinary skill would therefore use routine experimentation to determine the optimum curing conditions in order to adapt the vulcanization step to the specific tire being created.

In regards to claim 40, one of ordinary skill would appreciate that the curing pressure is dependent on the type of tires, its size, shape, and composition. One of ordinary skill would therefore use routine experimentation to determine the optimum curing conditions in order to adapt the vulcanization step to the specific tire being created.

Response to Arguments

2. Applicant's arguments filed 4/14/2011 have been fully considered but they are not persuasive.

Applicant argues on pages 5-7 of the remarks that combination of references is improper because "...Midgley et al. does not teach or suggest 'admitting a working fluid into said cavity to press the inner surface of said tire being processed against the outer surface of the toroidal support.'" Applicant asserts that Midgley only discloses performing vulcanization under normal atmospheric conditions or within usual compression molds. The examiner respectfully disagrees. Starting at line 35 on page 2, Midgley discloses that "during the regional vulcanization in the last named process, air pressure, may or may not be introduced into the heater as found desirable. Another way in which the regional vulcanization can be carried out is by inclosing the casing mounted on the core in a flexible mold such for example, as a metal shell containing a pneumatic cushion." Midgley also discloses on line 37 of page 5 that "the outside of the casings may be subjected during this part of the process to the action of compressed air to

Art Unit: 1747

prevent "blowing" due to the expansion of entrapped gases. Instead of using compressed air the molds may be brought together with sufficient contact with the casings for this purpose." Therefore, as originally stated by the examiner in the rejection, Midgley discloses that it is functionally equivalent to precure the tire component against the support using either atmospheric conditions or fluid pressure. It is also functionally equivalent to apply pressure from a working fluid or the halves a compression mold. Furthermore, Midgley discloses that when precuring a laminate, it is beneficial to use this fluid pressure to increase the lamination strength among the layers (Page 1, lines 80-82). Caretta discloses (in an exemplary sense) that the liner can be cured in open air. However, the liner of Caretta is cured on its own. Midgley discloses that when curing a laminate (such as a liner together with a carcass), it is beneficial to cure this laminate under a fluid pressure. For the above reasons, the examiner maintains that the combination of references is proper.

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 1747

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARTIN ROGERS whose telephone number is 571-270-7002. The examiner can normally be reached on Monday through Thursday, 7:30 to 5:00, and every other Friday, 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Martin Rogers/

/Christina Johnson/

Application/Control Number: 10/577,252

Page 10

Art Unit: 1747

Supervisory Patent Examiner, Art Unit 1742